

SportsMedUpdate

Professor Martin P Schweltnus, University of Cape Town, South Africa

ULTRASOUND-GUIDED SCLEROSIS OF NEOVESSELS IN PAINFUL CHRONIC PATELLAR TENDINOPATHY: A RANDOMIZED CONTROLLED TRIAL

Hoksrud A, Ohberg L, Alfredson H, et al. *Am J Sports Med* 2006;34:1738-46

Background:

Neovascularisation is frequently observed in chronic painful Achilles and patellar tendinopathy, and sclerosing the area of vascular ingrowth using polidocanol has been shown to reduce pain.

Research question/s:

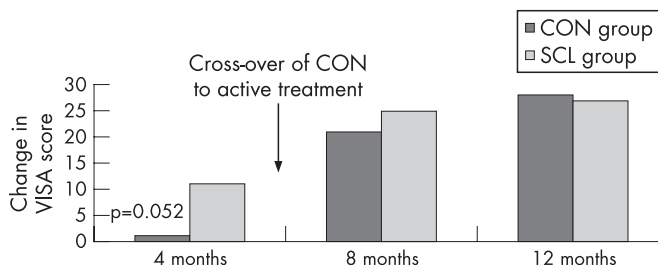
Does sclerosing treatment using polidocanol reduce pain and improve function in elite athletes suffering from patellar tendinopathy?

Methodology:

Subjects: 33 patients (42 tendons) with documented patellar tendinopathy. **Experimental procedure:** Subjects were randomly assigned to either a sclerosing group (SCL=17 patients (23 knees) receiving polidocanol injections in the area of neovascularisation) or a control (CON=16 patients (20 knees) receiving similar injections with lidocaine/epinephrine)—the control group was crossed over to active treatment after 4 months. Subjects were assessed at 0, 4, 8 and 12 months after the first injection. Training volumes were recorded in the two groups over the time period and were similar.

Measures of outcome: Pain and function (Victorian Institute of Sport Assessment (VISA) score).

Main finding/s:



After 8 months, when the CON group also had active treatment there was a greater improvement in the VISA score (58-79) than in the SCL group (54-70; group by time interaction, $p=0.022$; time effect, $p<0.0001$).

Conclusion/s:

In patients with patellar tendinopathy, sclerosing injections with polidocanol resulted in significant improvement in knee function and reduction in pain.

Evidence based rating: 8/10 **Clinical interest rating:** 8/10

Type of study: Randomised, controlled, crossover clinical trial

Methodological considerations: Well conducted study

Keywords: patella tendon, jumper's knee, neovascularisation, sclerosis, tendinosis, polidocanol

EPIDEMIOLOGY OF STRESS FRACTURE AND LOWER-EXTREMITY OVERUSE INJURY IN FEMALE RECRUITS

Rauh MJ, Macera CA, Trone DW, et al. *Med Sci Sports Exerc* 2006;38:1571-7

Background:

Overuse injuries of the lower leg, particularly stress fractures, are common in military recruits undergoing training and in endurance runners.

Research question/s:

What is the incidence of and risk factors for overuse injuries of the lower leg, particularly stress fractures, among female military recruits undergoing training?

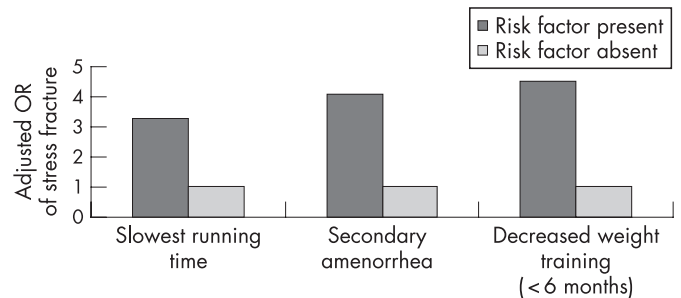
Methodology:

Subjects: 824 female military recruits (17-31 years old) undergoing basic military training.

Experimental procedure: All the subjects underwent a baseline assessment consisting of a pre-training questionnaire highlighting exercise and health habits, and performance on a standardised 1.5-mile timed run. Subjects were then followed during training for occurrence of lower leg injuries, including stress fractures (clinical and imaging diagnosis) and other lower-extremity overuse injuries.

Measures of outcome: Injury rates (injuries /1000 training days exposure (TDE)), logistic regression analysis for risk factors (crude odds ratio (OR) and adjusted OR (age, race/ethnicity, BMI)).

Main finding/s:



- Injury rates: overall injury rate, 12.6/1000 TDE; initial (first) injury rate, 8.7/1000 TDE; subsequent injury rate, 20.7/1000 TDE; lower-extremity stress fractures injury rate, 1.0/1000 TDE (6.8% recruits).
- Risk factor/s for non-stress fracture overuse injury during basic training: self-rated fair to poor fitness at baseline was the only risk factor.

Conclusion/s:

The incidence of lower-extremity overuse injury is high in female military recruits, and specific risk factors for stress fractures are decreased fitness (running and weight training) and secondary amenorrhea.

Evidence based rating: 7.5/10 **Clinical interest rating:** 8/10

Type of study: Prospective cohort study

Methodological considerations: Well conducted study, self-reported pre-training exercise data (recall bias), no assessment of lower limb biomechanics, military recruits study (cannot be generalised to other activities)

Keywords: stress fractures, lower leg, epidemiology, risk factors, females, fitness, menstrual irregularities

COMMUNITY PATIENT EDUCATION AND EXERCISE FOR PEOPLE WITH FIBROMYALGIA: A PARALLEL GROUP RANDOMIZED CONTROLLED TRIAL

Hammond A, Freeman K. *Clin Rehabil* 2006;20:835-46

Background:

A combination of exercise training and a patient education programme may reduce pain and improve function in patients suffering from fibromyalgia.

Research question/s:

Is a community patient education/exercise programme, using a cognitive-behavioral approach, effective in reducing pain and improving function in patients suffering from fibromyalgia?

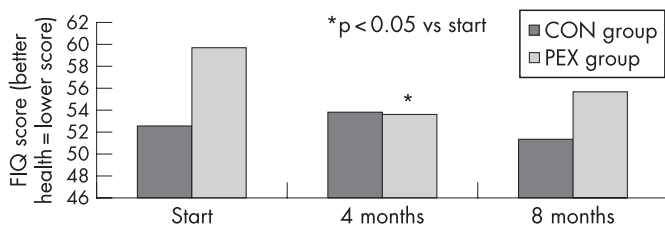
Methodology:

Subjects: 133 patients suffering from fibromyalgia (120 females, age 48.5 ± 10.9 years).

Experimental procedure: Subjects were randomised to two groups for treatment over a 9-month period: (1) a patient education/exercise group (PEX=97) or (2) a relaxation (attention control) group (CON=86). Assessments were conducted at 0, 4 and 8 months. Follow-up ranged between 73% and 82% of questionnaires returned.

Measures of outcome: Fibromyalgia Impact Questionnaire ((FIQ) 0–80; lower score means better health), Arthritis Self-Efficacy Scale (pain and other symptoms subscales: 1–10 scale; higher scores mean greater self-efficacy), self-reported improvement.

Main finding/s:



- Arthritis Self-Efficacy Scale scores: these scores were significantly higher in the PEX group at 4 months than the CON group ($p=0.003$); at 8 months these differences were no longer present.
- Self-reported improvement: 47% in the PEX group self-reported improvement compared with 13% in the CON group ($p=0.0001$).

Conclusion/s:

A 10-week education combined with exercise programme for patients with fibromyalgia results in short-term (4 month) improvements, but these improvements were not maintained at 8 months.

Evidence based rating: 7/10 **Clinical interest rating:** 7/10

Type of study: Randomised, controlled clinical trial

Methodological considerations: Well conducted study, high drop-out rate, multiple comparisons (possible type I error)

Keywords: fibromyalgia, education, exercise training, pain, function

PREDICTORS OF FUTURE ANABOLIC ANDROGENIC STEROID USE

Wichstrom L. *Med Sci Sports Exerc* 2006;**38**:1578–83

Background:

It is well established that adolescents use androgenic anabolic steroids (AAS). However, the pattern of use over time, as well as whether AAS use is predictive of future psychological consequences, has not been studied.

Research question/s:

Is the prevalence of AAS use in adolescents stable, and is past history of AAS use predictive of future emotional and behavioural problems?

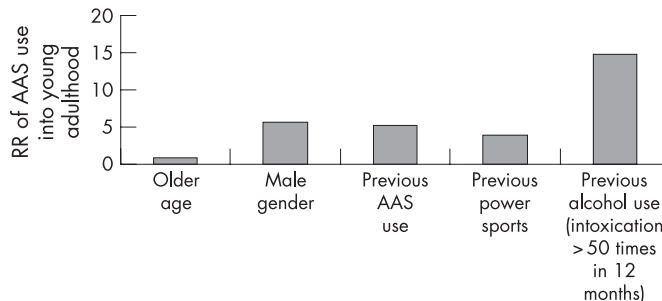
Methodology:

Subjects: 2924 Norwegian high school students (15–19 years old) who were studied in 1994 and again in 1999.

Experimental procedure: Surveys to document AAS use, involvement in power sports, appearance and eating problems, problem behaviour and emotional problems were conducted in 1994 (T1, as adolescents) and again in 1999 (T2, as young adults) (overall response rate 64%) using a questionnaire. Measures of frequent alcohol intoxication (50+ times per 12 months), cannabis use (12 months), hard drug use (12 months), being offered cannabis, eating problems, conduct problems, sexual debut before age 15, BMI, involvement in power sports, perceived physical appearance, and satisfaction with body parts were obtained.

Measures of outcome: Lifetime prevalence of AAS use (T1 and T2), predictors of future use of AAS, AAS use as a predictor of emotional and behavioural problems.

Main finding/s:



- Life-time prevalence of AAS use: the lifetime prevalence of AAS use was 1.9% at T1 and 0.8% at T2.
- AAS as a predictor of future emotional and behavioural problems: previous AAS use did not predict future emotional or behavioural problems, other than reducing the risk of future frequent alcohol intoxication.

Conclusion/s:

In a prospective cohort study of adolescents who previously used AAS, future AAS use is predicted by frequent alcohol intoxication and involvement in power sports.

Evidence based rating: 7/10 **Clinical interest rating:** 8/10

Type of study: Prospective cohort study

Methodological considerations: Well conducted study, small number of AAS users limits power, ability to generalise to other populations may be limited

Keywords: adolescents, anabolic steroid use, predictors, doping, alcohol, power sports